

A New Species of Ray of the Genus *Urolophus* (Elasmobranchii : Urolophidae) from Victoria

by JOAN M. DIXON*

Summary

A new species of ray, *Urolophus paucimaculatus* from Victorian waters is recorded and described. Some observations are made on the distribution and breeding of this species.

Introduction

On 2nd May, 1967, the author collected a number of ichthyological specimens in Westernport Bay, Victoria and, amongst the sample of urolophids, found specimens which could not be identified. The most distinctive features of these were the presence of a few white spots on the upper surface of the disc, and the unusual arrangement of the nasal apparatus. From a search of the literature, it appeared that this was indeed a new species, and attempts were made to gather additional material. A number of specimens were collected, and material already held in the collections of the National Museum of Victoria was examined.

Materials and Methods

Specimens were collected by various methods, some by hand, some by trawling and others were netted. They were fixed for a few days in 10% formalin, then washed and stored in 70% alcohol.

The description of the species is based on National Museum of Victoria

registered specimens, A 334 holotype and A 335-A 349 paratypes. Specimens R 13351-R 13356 and A 350 were examined. Measurements made on the type series are based mainly on the methods of Hubbs and Ishiyama (1968). They are point to point determinations and are measured in millimetres.

Systematic Account

Class—ELASMOBRANCHII

Family—UROLOPHIDAE

Genus *Urolophus* Müller and Henle, 1837

Ber. Verh. K. Pr. Akad. Wiss. Berlin, 1836 (1837), p. 117

Type species, *Raja cruciata* Lacépède

Urolophus paucimaculatus sp. nov.

Plates I-III, Table I

Material. Holotype: Male, total length 366 mm., National Museum of Victoria registration No. A 334, collected by A. O. Yateman in a 6" strand monofilament net in 40 fathoms in Bass Strait, approximately 13 miles off Cape Patton, Victoria, 28th September, 1968.

* Curator of Vertebrates, National Museum of Victoria.

Paratypes: 8 females and 6 males, National Museum of Victoria reg. nos. A 335-A 349 as follows:

A 335 male, t.l. 338 mm. netted in 40 fathoms off Cape Patton 28th September, 1968, coll. by A. O. Yateman.

A 336 male, t.l.	385 mm.	} Young of A 337
A 337 female, t.l.	463 mm.	
A 338 female, t.l.	142 mm.	
A 339 male, t.l.	138 mm.	
A 340 male, t.l.	130 mm.	
A 341 male, t.l.	133 mm.	
A 342 female, t.l.	135 mm.	
A 343 female, t.l.	133 mm.	

Netted in 20 fathoms, 5 miles south-east of Zeally Point, Torquay, Victoria, 6th October, 1968, by A. O. Yateman.

A 344 female, t.l.	308 mm.	} Young of A 345
A 345 female, t.l.	330 mm.	
A 346 male, t.l.	111 mm.	
A 347 male, t.l.	102 mm.	

Collected in otter trawl in 2 fathoms, in Hann's Inlet, between Sandy Point and Tortoise Head, Westernport Bay, Victoria, from Fisheries and Wildlife boat "Caprella", 2nd May, 1967 by J. M. Dixon.

A 348 male, t.l. 358 mm. Collected (by hand) off Kirk Pt. Port Phillip Bay, Vict. 1st October, 1967 by T. Muir.

A 349 male, t.l. 353 mm. Collected in 3 fathoms off Torquay, Vict. 19th July, 1968 by R. Milliken.

Other material examined. Nat. Mus. Vict. specimens reg. nos. R 13351-R 13356 from Fisherman's Bend, Vict. 2nd May, 1932, and A 350 from west of Lakes Entrance, Vic. 17th March, 1948. Coll. by A. Dunbavin Butcher.

Diagnosis. This species is most easily distinguished from other urolophids by the presence of a few small white spots on the upper surface of the disc, and by the shape and arrangement of the nasal apparatus. (Plates I-III).

Description. (For measurements of holotype, see Table I).

Disc broader than long, anterior lateral margins slightly angled, posterior border rounded. Snout produced into small sub-acute rostrum, behind it occur numerous dorsal pores. Distance between snout and mid-cloaca slightly exceeds distance from mid-cloaca to end of tail.

Tail dorso-ventrally flattened, stout at base; tapers gradually into spatulate, rounded caudal fin. Prominent lateral ridge arises just behind base of tail, becomes most evident half way along length of tail and obscure at about level of caudal spine. Spine stout, well defined, covered with skin in young specimens, bears 17-25 backwardly directed, slightly curved narrow teeth in older specimens. Pelvic fins widen gradually from insertion to rounded lateral margins, moderately acute on inner posterior border. No dorsal fin.

Orbits raised conspicuously above level of disc.

Spiracles roughly triangular, wider

behind than in front, anterior edge almost level with front of eye, posterior edge curves medially around hinder rim of orbit.

Nasal curtain in shape of a broad bell. Rounded antero-lateral margins almost fill nostril when depressed. Lobes of curtain asymmetrical, right lobe closes nostril more completely than left. Postero-lateral edges extended into small rounded processes projecting beyond hind border of curtain. Frenum mildly fimbriate, left and right sides divided by median notch at junction with nasal septum. Postero-lateral margin of nostril has characteristic inwardly directed prominence. Cavity of nostril bordered at rear by fleshy lobe which accommodates expansion of nasal curtain.

Mouth has small labial folds, lower lip shows a median shallow depression; skin behind lower lip pleated into several longitudinal folds.

Papillate maxillary velum in throat. Inside mouth, behind lower lip lies a series of small buccal processes which may divide into about six club-shaped extremities.

Teeth showing sexual dimorphism. Male with two distinct tooth types, undifferentiated, flat rhomboidal ones laterally, and sharp semi-triangular backwardly pointed ones towards mid line in both jaws. In females, teeth regularly arranged, rhomboidal, pavement-like with small transverse keels having slight backwardly projecting tips.

Colour. (Described from freshly preserved specimens). Disc grey-brown above, whitish grey below, edges of disc darker. A conspicuous U-shaped brown band between eyes just behind spiracle extends anteriorly around inner margin of orbit on each side, then posteriorly along outer margin. Upper surface of disc usually patterned with a few regularly ar-

ranged small white spots encircled by dark border.

In the type series the number of spots ranges from 0 (in three juveniles) to 9. Some spots spherical, others dumb-bell shaped. Position variable, usually in pairs in linear series; a single spot may occur between eyes, and any one of a pair may be absent.

Caudal fin darker than body of tail.

Iris of eye golden orange.

Dorsal spine translucent-white in adults, tinged with yellow in juveniles.

The above description is based on the specimens of the type series, both males and females. The holotype, A 334, a male, is distinguished by its spot pattern, one pair outside and almost level with front of eyes, a single spot between the eyes, one on left side behind the eye and a pair posterior to this.

Distribution. From material and records available the known range of *U. paucimaculatus* is from Portland, through Bass Strait, to a distance of 13 m. off the Victorian coast, into Port Phillip Bay, Westernport Bay, and off the Victorian coast at Lakes Entrance. The species is found in depths varying from 2-40 fathoms.

Breeding information. Specimens with young have been recorded on three occasions. One of the Westernport Bay specimens, A 345, gave birth prematurely to two young on 2nd May, 1967. In July of that year, Mr. B. Carthew of Portland sent in to the Museum a photograph of a female with four juveniles. On 6th October, 1968, A 337, taken from Zeally Pt., Torquay, produced six well formed young.

Affinities. The species *Urolophus paucimaculatus* is easily distinguished from the other Australian urolophids. Its spotted disc links it with such forms as *U. gigas*, *U. circularis* and

U. bucculentus; however, in both the number and arrangement of spots it can be distinguished from these species. There appear to be affinities with *U. viridis* and *U. lobatus*. In the former species, the greenish colour of the body and the absence of the small inwardly directed prominence on the hinder border of each nostril enable clear distinction from *U. paucimaculatus*. The conspicuous tentacle on the outer margin of the nostril in *U. lobatus* does not occur in *U. paucimaculatus*.

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TABLE I
Dimensions of *Holotype A 334*, in millimetres

Measurement No.	Part measured	Definition of part	Dimension in mm.
1	Total length	From snout top to caudal fin tip	366
2	Disc width	At maximum pectoral spread	235
3	Disc length (a)	Snout to posterior margin of pectoral fin.	205
4	Disc length (b)	Snout to inner pectoral margin	186
5	Snout-cloaca	Snout tip to cloaca centre	187
6	Tail length	Cloaca centre to tip of caudal fin	174
7	Tail width	Maximum, at insertion	20.5
8	Tail lateral fold	Anterior to posterior limits	70.8
9	Pelvic fin width	Maximum, each fin from posterior margin of cloaca	43.9
10	Pelvic fin length	From lateral insertion to inner posterior limit	52.4
11	Caudal fin	Maximum height	16.5
12	Preocular length	Snout tip to anterior margin of eyeball	52.8
13	Preoral length	Snout tip to mouth slit	50.1
14	Prenarial length	Snout to anterior rim of nostril	38.0
15	Internarial distance	Minimum separation of nostrils, at sides of nasal curtain	15.6
16	Nasal curtain—length	From front rim of nostril to posterior limit of curtain	12.9
17	Nasal curtain—width	Posterior width, left or right lobe	13.3
18	Mouth width	Between inner borders of lips	22.5
19	Eyeball length	Excluding surrounding tissue	12.1
20	Interorbital distance	Minimum, between inner-margins of orbits	31.5
21	Interspiracular distance	Minimum, between innermost border of spiracles	31.4
22	Spiracle length	Maximum from front to rear rim	17.3
23	Distance between gill slits	Between lateral extremities	
	1st pair		57.5
	2nd pair		54.4
	3rd pair		51.3
	4th pair		46.1
	5th pair		37.1
24	Snout to gill slits	To outer edge of gill slits	
	1st pair		84.2
	2nd pair		90.5
	3rd pair		98.2
	4th pair		103.2
	5th pair		107.0
25	Clasper length	Lateral, to pelvic fin junction	13.5
26	Tail spine length	From base posteriorly, to apex	35.4
27	Tail spines—number	All visible and clearly defined spines	25

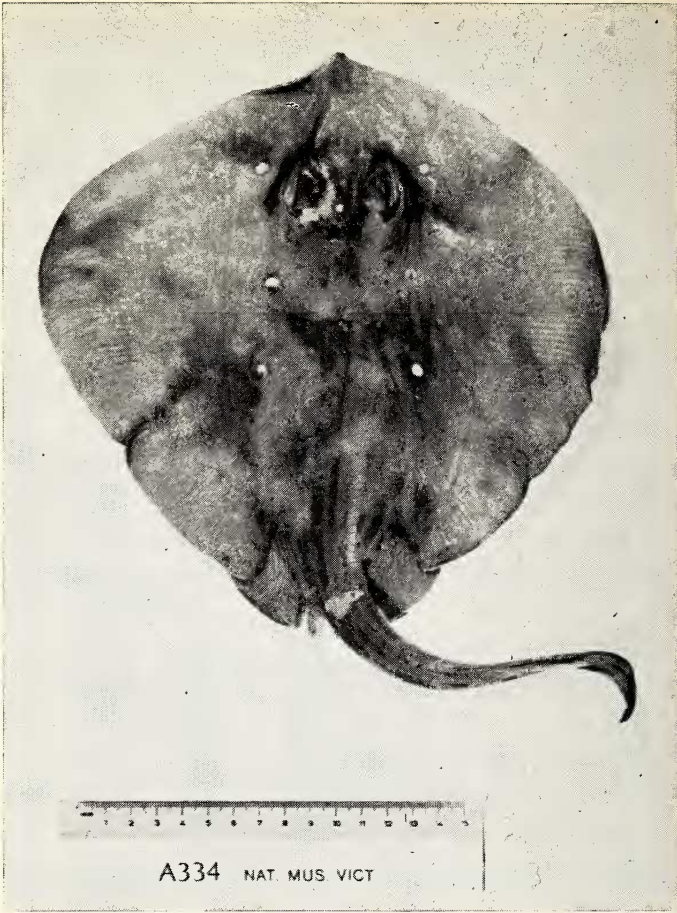


Plate I

Urolophus paucimaculatus sp. nov. Holotype, A 334, male, total length 366 mm., dorsal aspect

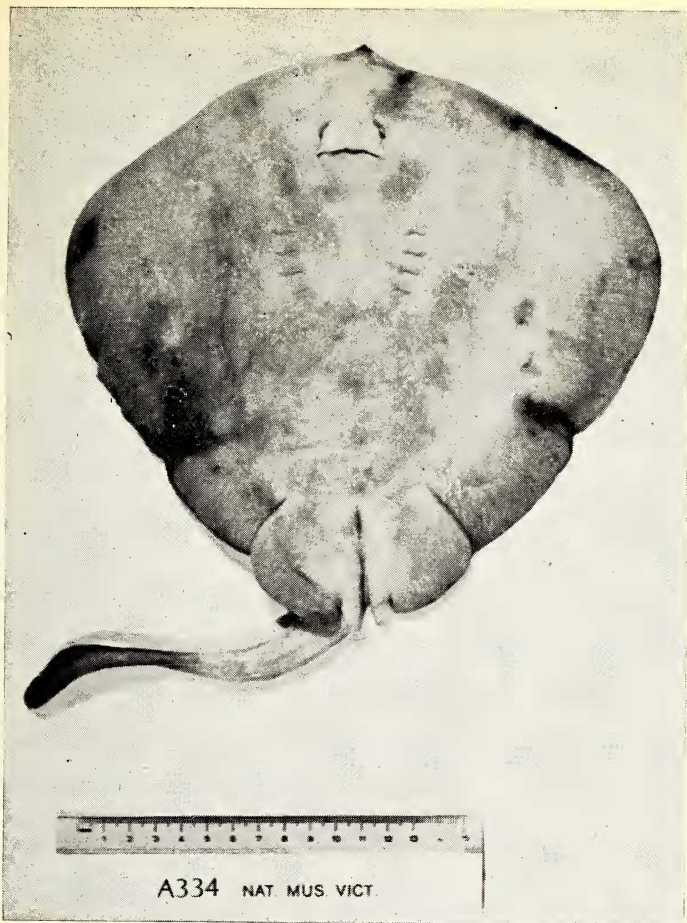


Plate II

Urolophus paucimaculatus sp. nov. Holotype, A 334, male, total length 366 mm.,
ventral aspect.

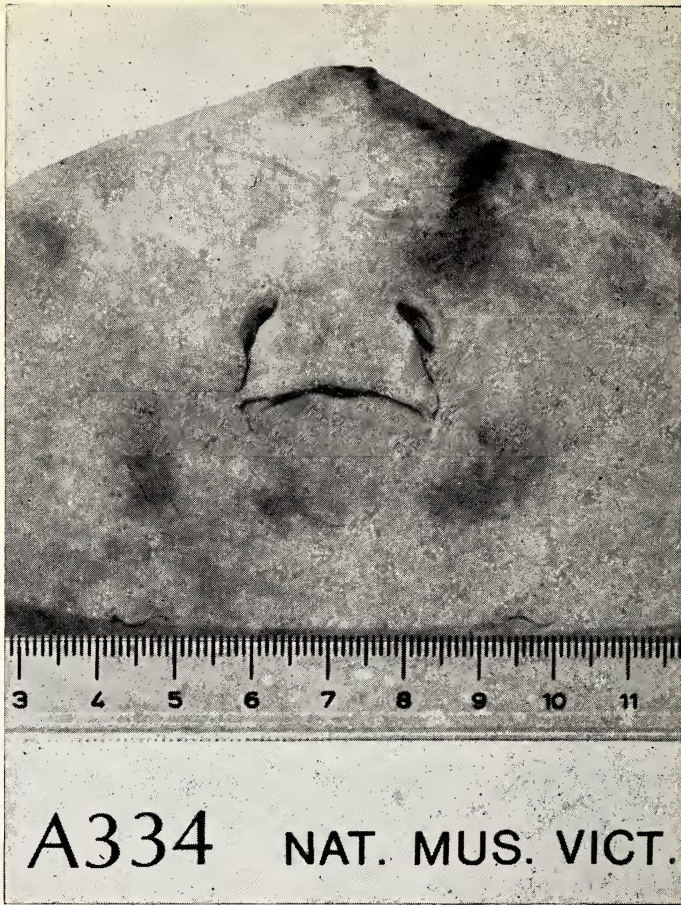


Plate III

Urolophus paucimaculatus sp. nov. Holotype, A 334, male, total length 366 mm.,
ventral aspect showing nasal apparatus.